STANDARD 5: TECHNOLOGY RESEARCH TOOLS

> *Note: The performance objectives described in Standard 5 rely upon the mastery of skills and understanding of concepts from Standards 1-4 of this document*

Students will utilize technology-based research tools to locate and collect information pertinent to the task as well as evaluate and analyze information from a variety of sources.

READINESS (Kindergarten)

No concepts identified for this level

FOUNDATIONS (Grades 1-3)

Students know and are able to do the following:

- **5T-F1. Recognize electronic information sources**
  See: Arts {Theatre} (2AT-F1), Language Arts (W-F5) and Workplace Skills (7WP-E2)

  PO 1. Identify potential sources of information about a topic (e.g., video or cassette tapes, Web pages, CD-ROMs)
  PO 2. Locate information in a resource selected by the teacher (e.g., Web page, CD-ROM)

ESSENTIALS (Grades 4-8)

Students know and are able to do all of the above and the following:

- **5T-E1. Locate information from electronic resources**
  See: Arts {Theatre} (2AT-E4), Language Arts (W-E8) and Mathematics (2M-E1, PO1)

  PO 1. Identify electronic research resources
  PO 2. Define subject searching and devise a search strategy to locate information using available electronic research resources (i.e., electronic card catalog, online or CD-ROM reference sources, grade level appropriate Internet resources)
  PO 3. Explain the difference between subject and keyword searching
  PO 4. Construct keyword searches including basic Boolean logic using available electronic research resources (i.e., electronic card catalog, online or CD-ROM reference sources and grade level appropriate Internet resources)
  PO 5. Identify the author, copyright date and publisher of information located in electronic resources, including Internet resources

- **5T-E2. Evaluate the accuracy, relevance, appropriateness, comprehensiveness and bias of electronic information sources**
    See: Social Studies (1SS-E1, PO2 and 1SS-E8, PO5-6)

    PO 1. Create citations for electronic research sources following a prescribed format
        (*See Technology 2T-E2,PO2)*
    PO 2. Gather research from a variety of electronic sources and identify the most appropriate
        information for answering the research question (*See Technology 5T-D2, PO2)*
    PO 3. Obtain permission, when appropriate, to use the work of others (*See Technology
         2T-E2, PO3)*
    PO 4. Identify the components of a URL to determine the source of the information
    PO 5. Identify the author of the information found from electronic resources and determine
        whether the author is an authority, displays bias and is a primary or secondary source

PROFICIENCY (Grades 9 - 12)

Students know and are able to do all of the above and the following:

- **5T-P1. Develop a research strategy to find accurate, relevant, appropriate electronic information sources**
    *See: Arts {Theatre} (2AT-P1), Language Arts (W-P4), Mathematics (2M-E1, PO 1),
    Social Studies (1SS-P2, PO1 and PO3) and Workplace Skills (7WP-P1)*

    PO 1. Explain the difference between Internet searching using directories and search engines
    PO 2. Construct online or electronic database searches using Boolean logic (AND, OR,
        NOT)
    PO 3. Independently select appropriate electronic resources from school, community and
        the world (via online) to be used to locate information needed when presented with a
        problem to solve
    PO 4. Evaluate the appropriateness and effectiveness of electronic resources (e.g., purpose,
        credibility of author)

- **5T-P2. Investigate and apply expert systems (e.g., search engines and intelligent agents)**
    See: Arts {Theatre} (2AT-P1) and Workplace Skills (1WP-P9, P10)

    PO 1. Given a concept, use online search engines as well as resource-specific search features
        (e.g., CD-ROMs) to find relevant information
    PO 2. Adapt software for personal efficiency by setting preferences for effective use of the
        software
    PO 3. Use advanced features (e.g., preferences, advanced searching, filtering) in Internet
        browser and information software

- **5T-P3. Present research findings from electronic resources using academic models for citations and format**
    See: Workplace Skills (1WP-P10, 2WP-P2)

    PO 1. Utilize evaluation criteria (authority, accuracy, relevancy, timeliness) for information found on the Internet to present research findings
    PO 2. Create citations for resources used following an academic model to present research findings

DISTINCTION (Honors)

Students know and are able to do all of the above and the following:

- **5T-D1. Design a research project using a variety of technologies to solve a real-world problem**
    See: Language Arts (W-D1)

- **5T-D2. Evaluate the accuracy, relevance, appropriateness, comprehensiveness and bias of electronic information sources**
    See: Arts {Theatre} (2AT-D2)

    PO 1. Compare and contrast bias in electronic information resources
    PO 2. Create a presentation on bias found in electronic information resources to present to a younger audience (*See Technology 5T-E2, PO4*)